

Carrot or stick? Experimental tests on a potential trade-off between effectiveness and compliance of alternative management approaches.

Sarah B. M. Kraak, Moritz A. Drupp, Martin Quaas

Abstract

Social dilemmas, such as manifested in overfishing, call for measures to ensure cooperation and compliance. Fisheries management has recently used “carrot” as well as “stick” approaches to incentivise fishers to deploy desired fishing practices. For example, in recent EU pilot projects fishers could get extra quota (a “carrot”) if they would take up full monitoring. In contrast, the 2008 EU cod plan forced effort reductions unless fishers would take up cod avoidance measures (a “stick”). The response to “carrots” versus “sticks” should be carefully considered. On the one hand, in line with the notion of loss aversion, some experimental evidence suggests that a “stick” is more effective than a “carrot” in motivating people. On the other hand, a “stick” approach is likely to induce a negative experience of management regulations, which may induce reduced compliance. Accordingly, a potential trade-off might exist between the higher management effectiveness of a “stick” approach and compliance with regulation. We report results from a laboratory experiment with students to test both hypotheses. We first conduct an effort task, to test motivation under a “carrot” or a “stick” treatment. Subsequently, the subjects perform an established truth-telling task, in which participants trade-off monetary payoffs with honest reporting, to test for differences in aggregate cheating behaviour between the two treatments. Experimental results will inform further research with fishermen in the field and provide important insights for the design of regulatory policy.

Keywords: behavioural economics, carrot versus stick, cheating, loss aversion, regulatory compliance

Contact author: Sarah B. M. Kraak, Thünen-Institut für Ostseefischerei, Alter Hafen Süd 2, 18069 Rostock, Germany. Phone: +49 381 8116 113. Email: sarah.kraak@thuenen.de